

- 31 -

## WHAT IS CLAIMED IS:

1. A process for making a disposable diaper formed from a composite web and a liquid-absorbent laminated panel attached  
5 to an inner side of said composite web, said process comprising the steps of:

feeding a continuous first web and a continuous second web having a transverse dimension larger than a corresponding dimension of said first web in a machine direction under tension  
10 in said machine direction while feeding continuous waist elastic members stretched at a predetermined ratio in said machine direction so as to be laid along transversely opposite side edges of said first web;

placing said first and second webs upon each other so that  
15 transversely opposite side edges of said second web extend outwardly of the transversely opposite side edges of said first web, then attaching said elastic members to an inner surface of at least one of said first and second webs and joining said first and second webs to each other to form a composite web;

20 placing a plurality of said panels each extending in a cross direction on said first web at regular intervals in said machine direction and joining to said first web;

folding zones of said second web extending outwardly of

- 32 -

the transversely opposite side edges of said first web inward in a cross direction along the side edges of said first web and joining the folded zones of said second web to said first web and to end zones of said panel in the cross direction;

5       cutting transversely middle zones of said composite web each extending between each pair of said panels which is adjacent to each other along each of first cutting lines generally describing a circle and folding said composite web inward together with said panels in the cross direction along  
10   the machine direction with said panels lying inside; and

      joining respective halves of said composite web folded inward together in a vicinity of each of second cutting lines extending in the cross direction on both sides of said first cutting line and cutting said composite web together with said  
15   elastic members along said second cutting lines to form a plurality of said diapers arranged in the machine direction.

2.     The process according to Claim 1, further including an coating first adhesive zones each continuously extending in the  
20   machine direction along each of the transversely opposite side edges of said second web on an inner surface of said second web with adhesives while coating second adhesive zones extending in the machine direction so as to be spaced one from another

- 33 -

by a predetermined dimension in the machine direction and lying between said first adhesive zones and the adjacent side edges of said first web with adhesives, respectively, on the inner surface of said second web, and joining the inner surface of said second web to an outer surface of said first web and the zones of said panel extending in vicinities of its transversely opposite ends by means of adhesives applied on said first and second adhesive zones.

10 3. The process according to Claim 1, further including a coating first adhesive zones each continuously extending in the machine direction inside each of the transversely opposite side edges of said first web along each of the transversely opposite ends of said panel on the outer surface of said first web with  
15 adhesives while coating second adhesive zones extending in the machine direction so as to be spaced one from another by a predetermined dimension in said machine direction and extending in the cross direction said first adhesive zones to the adjacent side edges of said first web, respectively, on the outer surface  
20 of said first web, and lying between said first adhesive zone and the adjacent side edge of said first web, and joining the inner surface of said second web to the outer surface of said first web and the zones of said panel extending in vicinities

- 34 -

of its transversely opposite ends by means of adhesives applied on said first and second adhesive zones.

4. The process according to one of Claims 2 and 3, wherein  
5 each of said adhesive zones is laid between each pair of said panels which are adjacent to each other in the machine direction.

5. The process according to one of Claims 1 through 4,  
10 wherein said liquid-absorbent laminated panel comprises a liquid-absorbent core, a liquid-pervious topsheet covering an upper surface of said core and a liquid-impervious backsheet covering a lower surface of said core, at least said topsheet.